

Universal Design for Learning Principles within the Comprehension Instructional Sequence Model

Purpose: To integrate Universal Design for Learning principles into the comprehension instructional sequence model to ensure that all students can actively interact with text and think critically about information in the text.

Universal Design for Learning is a set of principles for curriculum and lesson development that give all individuals equal opportunities to learn. UDL is based on brain research in the areas of:

1. **Recognition Networks** – How we gather facts and categorize what we see, hear, and read.
 - includes multiple methods for presenting information and content (e.g. paper and pencil, digital, refreshable braille display)
1. **Strategic Networks** – How we organize and express our ideas; plan and perform tasks.
 - includes multiple methods for differentiating the ways students can express what they know (e.g. writing with a pencil, writing on a computer, coding text on a computer)
2. **Affective Networks** – How we are challenged, excited, or interested.
 - includes multiple methods for stimulating interest and motivation for learning within the CIS (e.g. variations in hook questions, adjusting the level of cognitive complexity when coding text)

By providing multiple methods for how the text is presented, how students express what they learn, and how they cognitively engage with the text we help to ensure that all students can successfully participate in the CIS model.

Step 1 – Modeling Reading to Build Comprehension

Hook Question – The hook question is an excellent tool to stimulate interest and motivation for learning. Consider variations on the primary hook question that will match the world view and issues that are relevant to your students.

Predictive Writing – Writing activities should be provided in pencil and paper format, as well as digital for those students who need to use technology as a writing aid. Options to consider include:

1. Provide physical and digital graphic organizers based on the Essential Question to guide the predictive writing activity.
2. Have all writing forms and reading materials available in digital formats, such as a PDF file or a WORD document, to facilitate writing on a computer or mobile device.
3. Have a variety of word processors and writing tools available for students to use. Example writing support tools include:
 - Inspiration - <http://www.inspiration.com/>
 - Co:Writer - <http://www.donjohnston.com/products/cowriter/index.html>
 - WordQ - <http://www.gogsoftware.com/>
 - Read:Outloud - http://www.donjohnston.com/products/read_outloud/

- Read & Write Gold - <http://www.texthelp.com/North-America/our-products/readwrite>
 - Kurzweil 3000 <http://www.kurzweilededu.com/products.html>
4. Program the essential question and predictive writing language into augmentative communication devices prior to the predictive writing activity.

Vocabulary – Vocabulary words and phrases should be made available within any type of writing or communication technology being used by the students.

1. Add any vocabulary words and phrases to writing tools such as word prediction and digital word banks.
2. Program vocabulary words and phrases into augmentative communication devices.

Reading & Coding – All reading materials should be provided in flexible digital formats as well as on paper. This will allow students to change the presentation of the text (e.g. increase the font size) as needed.

1. Students who need to use a computer, mobile device, or technology writing aid should be familiar with how to mark-up and comment on the digital text. A tutorial on using these types of tools on a wide variety of software writing programs (such as WORD, Acrobat, etc.) can be found at <http://www.efdlrs.net/docs/DigitalToolsTutorials.pdf>.
2. Provide text-to-speech tools for students who have severe struggles with text decoding so they can focus on the comprehension aspects of the CIS model. Example tools include:

- Natural Reader - <http://www.naturalreaders.com/index.htm>
- WordQ - <http://www.gogsoftware.com/>
- Read:Outloud - http://www.donjohnston.com/products/read_outloud/
- Read & Write Gold - <http://www.texthelp.com/North-America/our-products/readwrite>
- JAWS - <http://www.freedomscientific.com/products/fs/jaws-product-page.asp>

3. Provide students who are struggling to make connections with the text a series of preparation activities where they can use appropriate assistive technologies to code the text.

Reading and Direct Note Taking –

1. Provide the guiding question in paper and digital graphic organizers and writing/thinking guides.
2. Support the reading and writing tools described above.
3. Consider the addition of note taking supports such as the Livescribe Pen (<http://www.livescribe.com/en-us/>) that records audio as the student takes notes.
4. Program the vocabulary of the guiding question into word prediction writing tools and augmentative communication devices.

Step 2 – Rereading and Question Generation to Deepen Comprehension

Question Generation & Collaborative Enquiry - Focus activities of Step 2 include students continuing to read and process the text, generate questions, and work collaboratively

in pairs or small groups. Reading and writing tools should continue to be provided to ensure that each student actively engages in all aspects of the activity. Tools that may be most helpful include:

1. Paper and digital graphic organizers.
2. Text-to-speech tools such as Natural Reader.
3. Speech-to-text dictation tools such as Dragon for Education.
4. Augmentative communication systems with the appropriate vocabulary programmed.

Step 3 – Using Text-Based Essential Questions to Facilitate Student Thinking While Reading

Text Based Discussion & Written Response – Step 3 brings in the previous tools and student work. The paper/digital graphic organizers and paper/digital versions of the activity forms should be available to guide student discussions and to review/revise answers to the essential question. Some things to consider:

1. Provide the essential questions aligned to FCAT Item Specifications in digital format.
2. If needed, program the possible choices for the aligned question in any communication devices.
3. Provide the Directed Note-Taking Handout in a digital format.
4. Consider the use of graphic organizers or writing tools specifically designed to visually support argumentative essay writing and text analysis. Rationale (<http://rationale.austhink.com/>) is one example.